CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for processing images, the method comprising:

act A: converting a first image data from a first color space into a second image data that

corresponds to a second color space;

act B: perform image processing on the second image data in the second color space to

form a processed image data; and

act C: converting the processed image data to a third image data that corresponds to any

one color space from a set of color spaces, the set of color spaces comprising:

the first color space;

a third color space; and

the second color space but using a conversion method that is different

from a conversion method that is used to perform act A,

wherein the first color space is a single color component color space.

2. (Canceled)

3. (Canceled)

4. (Currently Amended) The method of Claim 1, wherein the first color space ~~is an RGB raw~~

space. ~~includes any one of a second set of color spaces, the set comprising:~~

~~RGB raw space;~~

RGB composite space;

YC~~b~~C~~r~~ space;

YUV space;

YIQ space;

YD~~b~~D~~r~~ space;

YCC space;

HSI space;

HLS space;

HSV space;

CMY space; and

CMYK space.

5. (original) The method of Claim 1, wherein the second color space is a single color component
color space.

6. (original) The method of Claim 1, wherein the second color space is a multiple color
component color space.

7. (original) The method of Claim 1, wherein the second color space includes any one of a third
set of color spaces, the set comprising:

RGB raw space;

RGB composite space;

YC_bC_r space;

YUV space;

YIQ space;

YD_bD_r space;

YCC space;

HSI space;

HLS space;

HSV space;

CMY space; and

CMYK space.

8. (original) The method of Claim 1, wherein the third color space is a single color component color space.

9. (original) The method of Claim 1, wherein the third color space is a multiple color component color space.

10. (original) The method of Claim 1, wherein the third color space includes any one of a fourth set of color spaces, the set comprising:

RGB raw space;

RGB composite space;

YC_bC_r space;

YUV space;

YIQ space;

YD$_b$D$_r$ space;

YCC space;

HSI space;

HLS space;

HSV space;

CMY space; and

CMYK space.

11. (original) The method of Claim 1, wherein act A further comprises using one or more

temporary buffers to store the second image data.

12. (original) The method of Claim 1, wherein act B further comprises using one or more

temporary buffers to store the processed image data.

13. (original) The method of Claim 1, wherein act B further comprises one or more of the

following:

performing auto white balance;

performing auto exposure control;

performing gamma correction;

performing edge detection;

performing edge enhancement;

performing color correction;

performing cross-talk compensation;

performing hue control;

performing saturation control;

performing brightness control;

performing contrast control;

performing de-noising filters;

performing smoothing filters;

performing decimation filters;

performing interpolation filters;

performing image data compression;

performing white pixel correction;

performing dead pixel correction;

performing wounded pixel correction;

performing lens correction;

performing frequency detection;

performing indoor detection;

performing outdoor detection; and

applying special effects.

14. (original) The method of Claim 1, wherein act A further comprises performing a color

interpolation for converting each pixel that is associated with the first image data from a

single color component to a multiple color component to form a corresponding interpolated pixel.

15. (original) The method of Claim 14, further comprising applying a conversion equation to each interpolated pixel, wherein the conversion equation is selected based on the second color space.

16. (original) The method of Claim 1, wherein act A further comprises applying a conversion equation to each pixel, wherein the conversion equation is selected based on the second color space.

17. (original) The method of Claim 14, wherein performing a color interpolation further comprises deriving missing color components for each pixel from the pixel's neighboring pixels, wherein the neighboring pixels contain the missing color components.

18. (original) The method of Claim 17, wherein deriving missing color components for each pixel from the pixel's neighboring pixels comprises one or more of the following acts:
   act P: deriving missing color components for each pixel from the pixel's closest previous and next pixels in a horizontal direction, wherein the closest previous and next pixels contain the missing color components;
   act Q: deriving missing color components for each pixel that has no previous pixel in the horizontal direction from the pixel's closest next pixel in the horizontal direction, wherein the next pixel contain the missing color components;

act R: deriving missing color components, for each pixel that has no next pixel in the horizontal direction, from the pixel's closest previous pixel in the horizontal direction, wherein the previous pixel contain the missing color components;

act S: deriving missing color components for a line of pixels from a previous line of pixels, wherein the previous line of pixels contain the missing color components; and

act T: using a fixed number for each missing color component for the line of pixels if there is no previous line of pixels.

19. (original) The method of Claim 18, wherein act P further comprises averaging the pixel's closest previous and next pixels in the horizontal direction.

20. (original) The method of Claim 18, wherein act P further comprises using a weighting function on the pixel's closest previous and next pixels in the horizontal direction.

21. (original) The method of Claim 18, wherein act S further comprises averaging pixels corresponding to each missing color component from the previous line of pixels.

22. (original) The method of Claim 18, wherein act S further comprises applying a weighting function to pixels corresponding to each missing color component from the previous line of pixels.

23. (original) The method of Claim 18, wherein the fixed number is based on missing color components from previous frames.

24. (original) The method of Claim 14, further comprising using one or more filters, wherein the one or more filters include:

finite impulse response (FIR) filters;

infinite impulse response (IIR) filters;

low-pass filters;

high-pass filters;

band-pass filters;

band-stop filters;

all-pass filters;

anti-aliasing filters;

decimation (down-sampling) filters; and

interpolation (up-sampling) filters.

25. (original) The method of Claim 14, further comprising using filters before performing the color interpolation.

26. (original) The method of Claim 14, further comprising using filters after performing the color interpolation.

27. (original) The method of Claim 14, further comprising using filters before and after performing the color interpolation.

28. (original) The method of Claim 14, wherein performing a color interpolation further

comprises using one or more of the following interpolation methods:

nearest neighbor interpolation;

bilinear interpolation;

cubic interpolation;

Laplacian interpolation;

adaptive Laplacian interpolation;

smooth hue transition;

smooth hue transition Log interpolation;

edge sensing interpolation;

variable number of gradients;

pattern matching interpolation;

linear color correction interpolation; and

pixel grouping interpolation.

29. (original) The method of Claim 1, wherein act C further comprises re-mapping each pixel of

the processed image data into the selected color space.

30. (original) The method of Claim 1, wherein act C further comprises applying a conversion

equation to each pixel of the processed image data, wherein the conversion equation is

selected based on a selected color space from the set of color spaces.

31. (original) The method of Claim 30, further comprising, after applying the conversion equation, re-mapping each pixel of the processed image data into the selected color space.

32. (original) The method of Claim 31, wherein re-mapping includes dropping undesired color components.

33. (original) The method of Claim 32, further comprising using filters before dropping undesired color components.

34. (original) The method of Claim 32, further comprising using filters after dropping undesired color components.

35. (original) The method of Claim 32, further comprising using filters before and after dropping undesired color components.

36. (Currently Amended) A computer-readable medium carrying one or more sequences of instructions for computing degrees of parallelism for parallel operations in a computer system, wherein execution of the one or more sequences of instructions by one or more processors causes the one or more processors to perform the acts of:

act A: converting a first image data from a first color space into a second image data that corresponds to a second color space;

act B: perform image processing on the second image data in the second color space to

form a processed image data; and

act C: converting the processed image data to a third image data that corresponds to any

one color space from a set of color spaces, the set of color spaces comprising:

the first color space;

a third color space; and

the second color space but using a conversion method that is different

from a conversion method that is used to perform act A,

wherein the first color space is a single color component color space.

37. (Canceled).

38. (Canceled).

39. (Currently Amended) The computer-readable medium of Claim 36, wherein the first color

space is a RGB raw space. includes any one of a second set of color spaces, the set

comprising:

RGB raw space;

RGB composite space;

YC̶ᵦC̶ᵣ space;

YUV space;

YIQ space;

YD̶ᵦD̶ᵣ space;

YCC space;

HSI space;

HLS space;

HSV space;

CMY space; and

CMYK space.

40. (original) The computer-readable medium of Claim 36, wherein the second color space is a single color component color space.

41. (original) The computer-readable medium of Claim 36, wherein the second color space is a multiple color component color space.

42. (original) The computer-readable medium of Claim 36, wherein the second color space includes any one of a third set of color spaces, the set comprising:

RGB raw space;

RGB composite space;

YC_bC_r space;

YUV space;

YIQ space;

YD_bD_r space;

YCC space;

HSI space;

HLS space;

HSV space;

CMY space; and

CMYK space.

43. (original) The computer-readable medium of Claim 36, wherein the third color space is a

single color component color space.

44. (original) The computer-readable medium of Claim 36, wherein the third color space is a

multiple color component color space.

45. (original) The computer-readable medium of Claim 36, wherein the third color space

includes any one of a fourth set of color spaces, the set comprising:

RGB raw space;

RGB composite space;

YC_bC_r space;

YUV space;

YIQ space;

YD_bD_r space;

YCC space;

HSI space;

HLS space;

HSV space;

CMY space; and

CMYK space.

46. (original) The computer-readable medium of Claim 36, wherein act A further comprises

using one or more temporary buffers to store the second image data.

47. (original) The computer-readable medium of Claim 36, wherein act B further comprises

using one or more temporary buffers to store the processed image data.

48. (original) The computer-readable medium of Claim 36, wherein act B further comprises one

or more of the following:

performing auto white balance;

performing auto exposure control;

performing gamma correction;

performing edge detection;

performing edge enhancement;

performing color correction;

performing cross-talk compensation;

performing hue control;

performing saturation control;

performing brightness control;

performing contrast control;

performing de-noising filters;

performing smoothing filters;

performing decimation filters;

performing interpolation filters;

performing image data compression;

performing white pixel correction;

performing dead pixel correction;

performing wounded pixel correction;

performing lens correction;

performing frequency detection;

performing indoor detection;

performing outdoor detection; and

applying special effects.

49. (original) The computer-readable medium of Claim 36, wherein act A further comprises

performing a color interpolation for converting each pixel that is associated with the first

image data from a single color component to a multiple color component to form a

corresponding interpolated pixel.

50. (original) The computer-readable medium of Claim 49, further comprising applying a

conversion equation to each interpolated pixel, wherein the conversion equation is

selected based on the second color space.

51. (original) The computer-readable medium of Claim 36, wherein act A further comprises applying a conversion equation to each pixel, wherein the conversion equation is selected based on the second color space.

52. (original) The computer-readable medium of Claim 49, wherein performing a color interpolation further comprises deriving missing color components for each pixel from the pixel's neighboring pixels, wherein the neighboring pixels contain the missing color components.

53. (original) The computer-readable medium of Claim 52, wherein deriving missing color components for each pixel from the pixel's neighboring pixels comprises one or more of the following acts:

act P: deriving missing color components for each pixel from the pixel's closest previous and next pixels in a horizontal direction, wherein the closest previous and next pixels contain the missing color components;

act Q: deriving missing color components for each pixel that has no previous pixel in the horizontal direction from the pixel's closest next pixel in the horizontal direction, wherein the next pixel contain the missing color components;

act R: deriving missing color components, for each pixel that has no next pixel in the horizontal direction, from the pixel's closest previous pixel in the horizontal direction, wherein the previous pixel contain the missing color components;

act S: deriving missing color components for a line of pixels from a previous line of pixels, wherein the previous line of pixels contain the missing color components; and

act T: using a fixed number for each missing color component for the line of pixels if there is no previous line of pixels.

54. (original) The computer-readable medium of Claim 53, wherein act P further comprises averaging the pixel's closest previous and next pixels in the horizontal direction.

55. (original) The computer-readable medium of Claim 53, wherein act P further comprises using a weighting function on the pixel's closest previous and next pixels in the horizontal direction.

56. (original) The computer-readable medium of Claim 53, wherein act S further comprises averaging pixels corresponding to each missing color component from the previous line of pixels.

57. (original) The computer-readable medium of Claim 53, wherein act S further comprises applying a weighting function to pixels corresponding to each missing color component from the previous line of pixels.

58. (original) The computer-readable medium of Claim 53, wherein the fixed number is based on missing color components from previous frames.

59. (original) The computer-readable medium of Claim 49, further comprising using one or more filters, wherein the one or more filters include:

finite impulse response (FIR) filters;

infinite impulse response (IIR) filters;

low-pass filters;

high-pass filters;

band-pass filters;

band-stop filters;

all-pass filters;

anti-aliasing filters;

decimation (down-sampling) filters; and

interpolation (up-sampling) filters.

60. (original) The computer-readable medium of Claim 49, further comprising using filters before performing the color interpolation.

61. (original) The computer-readable medium of Claim 49, further comprising using filters after performing the color interpolation.

62. (original) The computer-readable medium of Claim 49, further comprising using filters before and after performing the color interpolation.

63. (original) The computer-readable medium of Claim 49, wherein performing a color

interpolation further comprises using one or more of the following interpolation methods:

nearest neighbor interpolation;

bilinear interpolation;

cubic interpolation;

Laplacian interpolation;

adaptive Laplacian interpolation;

smooth hue transition;

smooth hue transition Log interpolation;

edge sensing interpolation;

variable number of gradients;

pattern matching interpolation;

linear color correction interpolation; and

pixel grouping interpolation.

64. (original) The computer-readable medium of Claim 36, wherein act C further comprises re-

mapping each pixel of the processed image data into the selected color space.

65. (original) The computer-readable medium of Claim 36, wherein act C further comprises

applying a conversion equation to each pixel of the processed image data, wherein the

conversion equation is selected based on a selected color space from the set of color

spaces.

66. (original) The computer-readable medium of Claim 65, further comprising, after applying the conversion equation, re-mapping each pixel of the processed image data into the selected color space.

67. (original) The computer-readable medium of Claim 66, wherein re-mapping includes dropping undesired color components.

68. (original) The computer-readable medium of Claim 67, further comprising using filters before dropping undesired color components.

69. (original) The computer-readable medium of Claim 67, further comprising using filters after dropping undesired color components.

70. (original) The computer-readable medium of Claim 67, further comprising using filters before and after dropping undesired color components.